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Descriptions of Four New Species of the Subgenus
Hypostenus of the Genus *Stenus* LATREILLE
(Coleoptera, Staphylinidae) from Japan^{1,2)}

Shun-Ichiro NAOMI

Natural History Museum and Institute, Chiba
955-2 Aoba-cho, Chuo-ku, Chiba 260, Japan

and

Volker PUTHZ

Limnologische Flußstation des Max-Planck Institute für
Limnologie, Postfach 260, D-6407 Schlitz/Hessen, Germany

Abstract Four new species of the staphylinid subgenus *Hypostenus* of the genus *Stenus* are described: *S. sawadaiellus* from Nagano and Gifu Prefs., *S. izanagi* from Iwate Pref., *S. oisami* from Mt. Fuji, and *S. yamajii* from Okayama.

Key words: Coleoptera; Staphylinidae; Steninae; *Stenus*; Japan.

In this paper, four new species belonging to the staphylinid subgenus *Hypostenus* are described from Honshu, Japan, based on NAOMI, PUTHZ and FRANZ collections, and their aedeagi are illustrated for comparison.

Stenus (Hypostenus) sawadaiellus NAOMI et PUTHZ, sp. nov.

Male and female. Body length: 3.2–4.2 mm (fore-parts: 1.9–2.0 mm).

Head black to dark brown, moderately shining; pronotum, elytra and abdomen dark reddish brown through brown to reddish brown, moderately shining; elytra a little paler in color than pronotum; maxillary palpi and antennae clear yellow; labrum brown with anterior margin reddish brown; legs reddish brown to yellowish brown.

Body slender and cylindrical.

Head shorter (0.81:1) and broader (1.26:1) than pronotum, 1.65 times as broad as long, broadest at about posterior 1/3; labrum and clypeofrontal area with sparse setae and microsculptures, basiantennal tubercles distinct; interocular area with a pair of longitudinal depressions, the depressions broad and deep, median area between the depressions strongly elevated; punctation moderately coarse and

1) Studies on the subfamily Steninae from Japan, XXI (NAOMI).

2) Contribution to the knowledge of Steninae, 235 (PUTHZ).

moderately dense, distinct and a little irregular, diameter of punctures slightly larger than basal cross-section of 3rd antennal segment, interstices distinctly sculptured, mostly smaller than diameter of punctures, but distinctly larger in the median portion and behind antennal tubercle than the diameter; neck area with sparse and small punctures. Antennae slender, nearly reaching posterior margin of pronotum, 1st and 2nd segments each much broader than 3rd, 8th smallest, longer than broad, 9th to 11th forming a loose and relatively small club, with relative lengths of segments from base to apex as 10: 9: 18: 11: 10: 8: 8: 4: 5: 6: 9.

Pronotum shorter (0.91: 1) and narrower (0.85: 1) than elytra, convex above, broadest slightly before the middle, constricted at base; surface uneven with a median longitudinal furrow and some weak impressions at lateral parts, the median furrow running through almost full length of pronotum, but shorter in some specimens, broadest near the middle; punctation coarse, rough to very rough (rugosely punctured) and very dense, interstices shining and indistinctly sculptured. Mesoscutellum with round punctures of different sizes.

Elytra broader than long (1.14: 1), convex above with sutural area weakly elevated, side margins gently rounded, but weakly bisinuate in holotype specimen, hind margins together forming a wide and moderately deep emargination; surface uneven; punctation coarser than on pronotum, very dense, rough, interstices shining, with shallow microsculpture.

Legs slender and moderate in length, 4th tarsal segments distinctly and deeply bilobed.

Abdomen well-developed, with uniform, short and sparse setae throughout; paratergites and dorso-ventral sutures absent, but vestige of longitudinal margination visible from an angle under special light; 3rd to 6th tergites each with transverse depression, the depression becoming shallower posteriorly from 3rd to 6th; punctures on 3rd tergite round, distinct and regular, the interstices narrower than diameters of punctures, distinctly sculptured, punctures becoming smaller and sparser posteriorly from 3rd to 8th tergites, punctures on 8th tergite very fine, the interstices much broader than diameter of punctures.

Male. Abdomen a little narrower than that in female; 8th sternite with a shallow emargination in about posterior 1/17; 9th sternite with a pair of posterolateral projections, the projections strongly pointed, 1 or 2 long setae at each base of the projection, posterior margin between the projections arcuately emarginate and minutely serrate. Aedeagus (Fig. 1 A) with median lobe broad and subparallel-sided, sclerotized at apico-marginal part, with a fovea opening apicad on dorsal side, a long and pointed projection at apico-median part, with narrow and distinct emargination at each base of the projection, internal armatures as in Fig. 1 A; parameres slender, almost reaching apex of the apico-median projection of median lobe, and sparsely set with long setae at apico-internal parts, pointed at apices.

Female. Eighth sternite obtusely pointed at postero-median part; spermatheca composed of a crowded complex of thin tube which is somewhat longer than 1/3 of

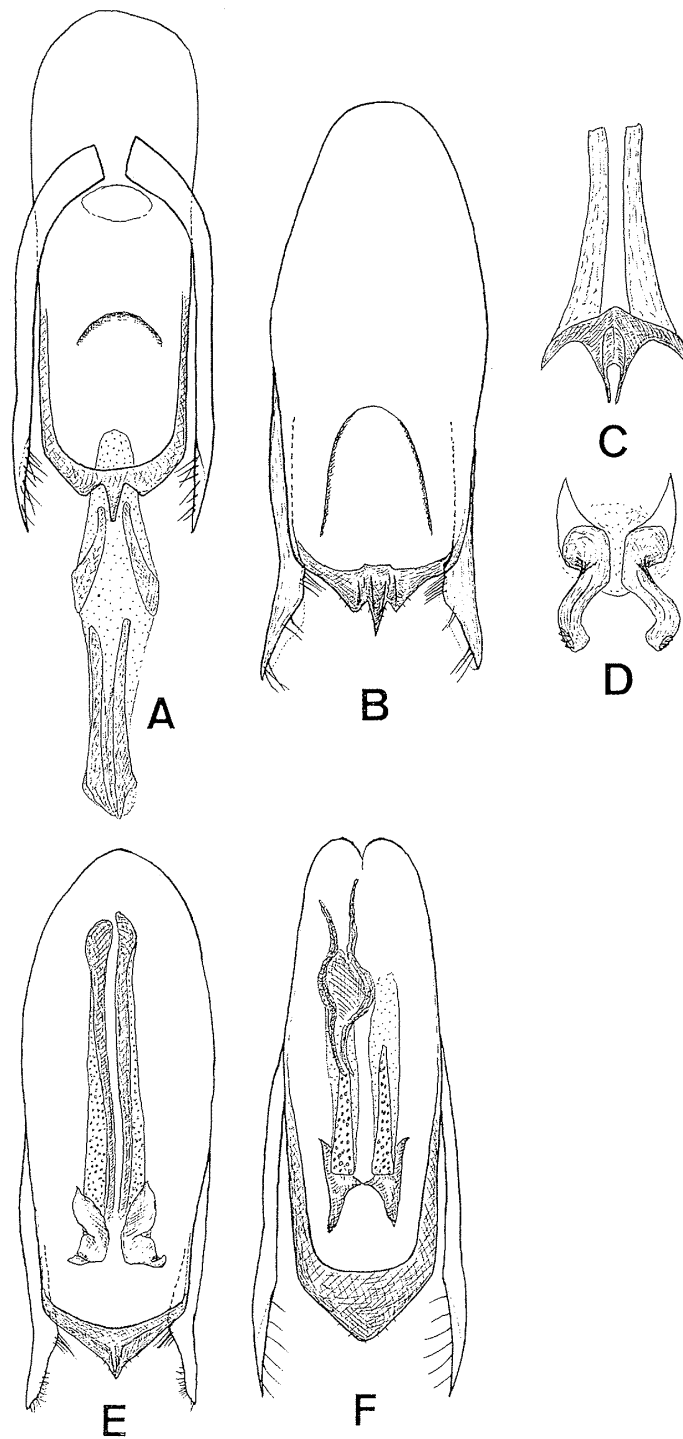


Fig. 1. A, *Stenus sawadaellus* sp. nov. from Ontake, Nagano; B-D, *S. izanagi* sp. nov. from Hayachine, Iwate; E, *S. oisami* sp. nov. from Fuji; F, *S. yamajii* sp. nov. from Mumou, Okayama. A, Aedeagus from dorsal view; B, E-F, aedeagi from ventral view; C-D, internal armatures of aedeagus.

the length of valvifer, its strongly sclerotized distal piece with its length being about 1/6 of valvifer.

Holotype, male (PUTHZ collection), Mt. Ontake, Nagano Pref., 6. x. 1972, K. SAWADA coll. Paratypes, 1 male, same data as holotype (Museum Geneva); 1 male and 1 female, Nigorigo Spa., Gifu Pref., 6. xi. 1972, K. SAWADA coll.; 4 males and 3 females, same locality, 22. ix. 1972, R. YOSHII coll.

Distribution. Japan (Honshu).

Remarks. *Stenus sawadaiellus* sp. nov. is allied to *Stenus fukuimontium* PUTHZ, 1993 from Fukui Pref., but the eyes are smaller and the labrum is brown and its marginal area is reddish brown (while in *S. fukuimontium* the labrum is reddish brown throughout). This new species is also allied to *S. tengu* HROMÁDKA, 1990 from Toyama Pref., but the color of the body is different as described above (while in *S. tengu*, the body is entirely black). Median lobes of the aedeagi are different between these two species: in *S. tengu* there is no emargination at each base of the apico-median projection, while in *S. sawadaiellus* there is a narrow emargination at each base of the projection.

Etymology. This species is named in honor of our colleague, Dr. Kôhei SAWADA who collected the holotype specimen.

***Stenus (Hypostenus) izanagi* NAOMI et PUTHZ, sp. nov.**

Male. Body length: 3.6–4.6 mm (fore-parts: 2.2 mm).

Head and pronotum entirely black; elytra and abdomen dark brown to dark reddish brown; maxillary palpi reddish brown; antennae reddish brown to yellowish brown; labrum dark brown with anterior margin yellowish brown; legs reddish brown.

Body slender and cylindrical.

Head shorter (0.78: 1) and broader (1.25: 1) than pronotum, 1.61 times as broad as long, broadest at about posterior 2/5; labrum with sparse and relatively long setae; clypeofrontal area pubescent, with its posterior half punctured; interocular area with basiantennal tubercles distinct, a pair of longitudinal depressions which are deep and distinct, median part between the depressions strongly elevated; punctation moderately coarse and moderately dense, diameter of punctures about as large as cross-section of 3rd antennal segment in its basal 3rd, interstices shining and sculptured, smaller than diameter of punctures, distinctly larger in the median portion and behind antennal tubercles than the diameter. Antennae with similar structure to those of *S. sawadaiellus*, with relative lengths of segments from base to apex as 10: 8: 18: 10: 10: 7: 7: 5: 6: 7: 9.

Pronotum slightly longer than broad and narrower than (0.86: 1) elytra, convex above, broadest at anterior 2/5, moderately constricted at base; surface uneven, with a median longitudinal furrow of almost full length of pronotum, the furrow being deepest near center, some more impressions at lateral sides; punctation coarse,

very rough (rugose) and very dense, diameter of punctures about as large as widest cross-section of 3rd antennal segment, interstices moderately shining and indistinctly sculptured. Mesoscutellum with small, round and distinct punctures.

Elytra broader than long (1.11:1), moderately convex above, side margins rounded, hind margins together forming a moderately deep emargination; surface uneven; punctation rough and very dense, coarser than on pronotum, interstices shining and indistinctly sculptured.

Legs elongate; femora thick, 4th tarsal segments deeply and distinctly bilobed.

Abdomen well developed, gradually narrowed posteriorly; paratergites and dorsoventral sutures absent, vestige of longitudinal margination visible under special light; pubescence short and sparse; punctures on 3rd tergite round, distinct and dense, interstices much narrower than diameters of punctures, shining and indistinctly sculptured, punctures becoming smaller and sparser posteriorly from 3rd to 8th tergites, punctures on posterior half of 8th tergite almost round and sparse, interstices broader than diameters of punctures, distinctly sculptured; 7th sternite distinctly but weakly projected posteriorly at postero-median part; 8th sternite with a triangular emargination in about posterior 8th; 9th sternite with a pair of pointed postero-lateral projections, posterior margin between the projections arcuately emarginate and serrate. Aedeagus robust (Fig. 1 B), median lobe broad, broadest a little before the middle, with a large fovea opening posteriorly on dorsal side, apico-marginal part sclerotized, with longitudinal sculptures, apico-median part with three projections, the median projection longer and slenderer than lateral ones, internal armatures as in Fig. 1 C, D, expulsion hooks of internal sac apically crenulate; parameres reaching far beyond apex of median projection of median lobe, each distinctly thick near apical part (Fig. 1 B), then narrowed to pointed apex, apically set with three distinctly separated groups of setae.

Female. Unknown.

Holotype, male (Type No. CBM-ZI 52411), Mt. Hayachine, Iwate Pref., 17. vii. 1985, S. NOMURA coll.

Distribution. Japan (Honshu).

Remarks. *Stenus izanagi* sp. nov. is very similar in general appearance to *S. kumoma* NAOMI, 1987 from the same locality, but generally more robust. In *S. kumoma* there is no apical projection at the posterior margin of 7th sternite in male and the median lobe of aedeagus is robuster, the expulsion hooks of internal sac are apically simple, the three projections are much less distinct at the apico-median part, the parameres of aedeagus are more slender near the apices, and its setae are distributed more equally. This new species is allied to *S. tengu* HROMÁDKA, 1990 from Toyama, but the body is larger and, the postero-lateral projections of the 9th sternite are shorter; the former is easily separable from the latter also by the modification of apico-median projections of aedeagus mentioned above.

Etymology. The specific name is the Japanese noun *izanagi*, which is the name of a god appearing in an ancient Japanese mythology.

Stenus (Hypostenus) oisami NAOMI et PUTHZ, sp. nov.

Male. Body length: 2.9–3.6 mm (fore-parts: 1.8 mm).

Head dark brown except for reddish brown clypeofrontal area; pronotum and elytra yellowish brown; abdomen reddish brown; maxillary palpi and antennae clear yellow; labrum reddish brown; legs yellowish brown.

Body slender and cylindrical.

Head shorter than (0.73: 1) and broader than (1.28: 1) pronotum, 1.70 times as broad as long, broadest at about posterior 1/3; labrum with sparse setae; clypeofrontal area with sparse setae and small punctures; interocular areas with basiantennal tubercles extending posteriorly to form short and low keels, and with a pair of broad longitudinal depressions, median area between the depressions broadly and strongly elevated; punctation moderately coarse and dense, diameter of punctures as large as cross-section of 3rd antennal segment in its anterior 1/5, interstices mostly slightly smaller than half the diameter of punctures, sparser at elevated median portion, which is also shiny because of shallow punctation; neck with fine and sparse punctures. Antennae reaching about posterior margin of pronotum, 1st and 2nd segments each much broader than 3rd, 9th to 11th forming a loose club, with relative lengths of segments from base to apex as 10: 8: 20: 11: 11: 8: 7: 4: 5: 6: 9.

Pronotum a little longer (1.06: 1) and narrower (0.82: 1) than elytra, convex above, broadest near the middle, constricted at base; surface uneven, with a longitudinal furrow and some lateral impressions, the median furrow running full length of pronotum except near anterior and posterior margins and deepest near center; punctation very rough (rugose) and very dense, well as coarse as on head, interstices shining and indistinctly sculptured. Mesoscutellum with a few small punctures.

Elytra broader than long (1.26: 1), moderately convex above, constricted at base, side margins rounded, hind margins together forming an arcuate emargination; surface almost smooth; punctation very dense, coarser than on pronotum, diameter of punctures nearly as large as apical cross-section of 2nd antennal segment, interstices shining and faintly sculptured.

Legs elongate; femora relatively thick, 4th tarsal segments distinctly bilobed.

Abdomen almost parallel-sided, without paratergites; tergosternal sutures obsolete in 3rd to 6th segments; 3rd to 6th tergites each with transverse depression, the depressions becoming shallower posteriorly from 3rd to 6th; punctures on 3rd tergite relatively small, distinct, regular and round, the interstices very shining and indistinctly sculptured, punctures becoming smaller and sparser posteriorly from 3rd to 8th tergites, punctures on 8th tergite very small, the interstices much broader than diameters of punctures, minutely sculptured; 8th sternite with a triangular notch in about posterior 1/9; 9th sternite with a pair of acutely pointed postero-lateral projections. Aedeagus (Fig. 1 E) elongate oval, median lobe broadest at about anterior 1/3, then gradually and gently narrowed posteriorly, with apico-marginal scler-

rotized area not so much developed, and not extending anteriorly, apico-median part pointed, internal armatures as in Fig. 1 E; parameres a little convergent posteriorly to near apico-lateral corners of median lobe (where each paramere is broadest), then weakly divergent to pointed apices, each apico-internal part with two tufts of setae, one placed at apico-internal corner and composed of longer setae, the other near apex and composed of shorter setae.

Female. Unknown.

Holotype, male (FRANZ collection), Mt. Fuji (2,000–2,300 m), Yamanashi-Shizuoka Prefs.

Distribution. Japan (Honshu).

Remarks. *Stenus oisami* sp. nov. is allied to *S. bicara* NAOMI, 1988, but the apico-lateral margins of the median lobe of aedeagus are almost straight; the parameres are shorter; and two tufts of different kinds of setae are found at the apico-internal part of paramere. This new species is also allied to *S. okamotoi* NAOMI, 1989, but the abdomen is reddish brown, the median lobe is elongate oval; the former is different from the latter also in the same aedeagal characters separating it from *S. bicara*.

Etymology. The specific name is the Japanese noun oisami, which is a dialect of Kagura-music.

Stenus (Hypostenus) yamajii NAOMI et PUTHZ, sp. nov.

Male. Body length: 2.3–3.0 mm (fore-parts: 1.5 mm).

Head black and shining except for dark brown clypeofrontal area; pronotum and elytra brown to reddish brown, moderately shining; abdomen dark reddish brown, shining; maxillary palpi and legs yellowish brown; labrum reddish brown; antennae with 1st to 2nd and 8th to 11th segments brown to dark brown, 3rd to 7th yellowish brown.

Body small, slender and very cylindrical.

Head shorter (0.84: 1) and broader (1.33: 1) than pronotum, 1.63 times as broad as long, broadest at posterior 1/3; labrum with sparse setae; clypeofrontal area glabrous at center; interocular area with basiantennal tubercles low, but extending posteriorly to form short keels, a pair of distinct and deep longitudinal depressions convergent anteriorly, median area between the depressions broadly elevated, narrowed anteriorly; punctation distinct, dense, regular and moderately coarse, diameter of punctures about as large as cross-section of 4th antennal segments, interstices often about as large as diameter of punctures, shining but distinctly reticulate. Antennae when reflexed, nearly extending toward the posterior margin of pronotum, with 1st and 2nd segments broad, 8th smallest, longer than broad, 9th and 10th each oval, with relative lengths of segments from base to apex as 10: 8: 18: 10: 9: 7: 6: 4: 5: 7: 9.

Pronotum about as long as and narrower than (0.85: 1) elytra, well convex

above, broadest at about the middle, constricted at base; surface slightly uneven, with an elongate-oval depression near center of pronotum; punctation very dense and rough, moderately coarse, diameter of punctures as large as widest cross-section of 3rd antennal segment, interstices smaller than half the diameter of punctures, shining, indistinctly sculptured. Mesoscutellum with a few punctures.

Elytra broader than long (1.18: 1), well convex above, side margins rounded, hind margins together forming a shallow and arcuate emargination; surface even, with sutural area weakly elevated; punctation very dense, coarser than on pronotum, diameter of punctures about as large as apical cross-section of 2nd antennal segment, interstices very narrow, shining and indistinctly sculptured.

Legs moderate in length, 4th tarsal segments distinctly bilobed.

Abdomen very cylindrical, weakly narrowed posteriorly; paratergites and tergo-sternal sutures absent; transverse depressions on 3rd to 7th tergites relatively shallow; punctures on 3rd tergite usually oval, sometimes round, distinct, dense and regular, interstices very shining and indistinctly sculptured, punctures becoming sparser and smaller posteriorly from 3rd to 8th tergites, punctures on 8th tergite very small and sparse, the interstices much broader than diameters of punctures; 8th sternite with a small V-shaped emargination in about posterior 15th to 16th; 9th sternite with a pair of postero-lateral projections, the projections acutely pointed and moderate in length, posterior margin between the projections almost straight and minutely serrate, with some long setae at each base of the projection. Aedeagus (Fig. 1 F) with median lobe broadest near the middle, gently narrowed both anteriorly and posteriorly, with apico-marginal sclerotized area large, continuing to lateral parts in apical half, apico-median part obtusely pointed, internal armatures as in Fig. 1 F.; parameres slender, extending much beyond apico-median part of the median lobe, each broadest near apico-lateral corner, acutely pointed at apex, with sparse and very long setae at apico-internal part.

Female. Unknown.

Holotype, male (Type No. CBM-ZI 52412), Mt. Mumou, Shinshou-mura, Okayama Pref., 4. v. 1989, O. YAMAJI coll.

Distribution. Japan (Honshu).

Remarks. *Stenus yamajii* sp. nov. is allied to *S. taoi* NAOMI, 1989, but the pronotum and elytra are brown to reddish brown, the punctures on the 3rd tergite are usually oval, the apico-marginal sclerotized area of the median lobe is developed, and the apico-median part is obtusely pointed. This new species is also allied to *S. amma* NAOMI et NOMURA, 1990, but the head is black, and the parameres are acutely pointed at apices.

Etymology. This species is named after Mr. Osamu YAMAJI (Okayama City) for his kindness in giving the holotype specimen of this new species to NAOMI.

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